

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims:

1. (Currently Amended) A sheath for deployment of a medical device having a first outer diameter in a first, closed state and a second outer diameter in a second, expanded state, comprising:

an elongate tubular member having a proximal end, a distal end, and a lumen therebetween, the elongate tubular member having a first opening from the lumen at the distal end and a second opening from the lumen proximal to the distal end, the openings defining points at which the lumen opens to an environment surrounding the sheath ~~the first opening having a diameter at least as great as the first outer diameter of the medical device;~~

a guidewire that passes through the first opening, through the lumen of the elongate tubular member, and through the second opening; and

a support wire extending through the lumen from proximal the second opening toward the distal end ~~having a proximal end and a distal end, the support wire being positioned within the lumen of the elongate tubular member,~~ the support wire adapted to receive an endoluminal medical device.

2. (Original) The sheath of claim 1, wherein the sheath is a rapid exchange sheath.

3. (Original) The sheath of claim 1, wherein the second opening is a short distance proximal to the distal end.

4. (Currently Amended) The sheath of claim 1, wherein the support wire further comprises an expandable filter mounted on ~~[[the]]~~ a distal end of the support wire.

5. (Original) The sheath of claim 4, wherein the support wire and filter are positioned within the lumen of the elongate tubular member.

6. (Original) The sheath of claim 1, further comprising an endoluminal medical device.

7. (Withdrawn) The sheath of claim 1, wherein the proximal end of the elongate tubular member includes a hemostatic valve.

8. (Original) The sheath of claim 6, wherein the endoluminal medical device is selected from the group consisting of an angioplasty catheter, a stent-deployment catheter, an atherectomy catheter, an intravascular ultrasound catheter, a filter catheter, a guidewire, and an aspiration catheter.

9. (Original) The sheath of claim 1, wherein the second opening is located 10 centimeters proximal from the distal end.

10. (Currently Amended) A method for deploying an endoluminal medical device having a first outer diameter in a first, closed state and a second outer diameter in a second, expanded state, comprising the steps of:

providing an elongate tubular member having a proximal end, a distal end, and a lumen therebetween, the elongate tubular member having a first opening from the lumen at the distal end and a second opening from the lumen proximal to the distal end, the openings defining points at which the lumen opens to an environment surrounding the sheath ~~the first opening having a diameter at least as great as the first outer diameter of the medical device;~~

advancing a guidewire to a region of interest within a patient's vessel;

passing a proximal end of the guidewire through the first opening, through the lumen of the elongate tubular member, and through the second opening;

advancing the elongate tubular member over the guidewire until it is positioned within a region of interest; and

advancing an endoluminal medical device through the lumen from proximal the second opening and out the first opening of the elongate tubular member until it is positioned within the region of interest.

11. (Original) The method of claim 10, wherein the second opening is a short distance proximal to the distal end.

12. (Original) The method of claim 10, wherein the endoluminal medical device is positioned within the lumen of the elongate tubular member before the step of advancing the elongate tubular member over the guidewire.

13. (Original) The method of claim 10, wherein the step of advancing the guidewire to a region of interest is completed before the step of passing a proximal end of the guidewire through the first opening.

14. (Original) The method of claim 10, further comprising the step of removing the guidewire.

15. (Original) The method of claim 10, further comprising the step of withdrawing the elongate tubular member.

16. (Original) The method of claim 10, further comprising the step of deploying the endoluminal medical device.

17. (Original) The method of claim 10, wherein the endoluminal medical device is a support wire having a filter mounted on a distal end.

18. (Original) The method of claim 17, further comprising the step of advancing a second endoluminal medical device over the support wire.

19. (Original) The method of claim 17, further comprising the step of expanding the filter downstream of the region of interest.

20. (Original) The method of claim 10, wherein the vessel is an artery.

21. (Original) The method of claim 20, wherein the artery is the internal carotid artery.

22. (Original) The method of claim 20, wherein the artery is the common carotid artery.

23. (Original) The method of claim 20, wherein the artery is the aorta.

24. (Original) The method of claim 10, wherein the elongate tubular member is positioned upstream of a lesion.

25. (Currently Amended) A sheath for deployment of a medical device having a first outer diameter in a first, closed state and a second outer diameter in a second, expanded state, comprising

an elongate tubular member having a lumen, a proximal end and a distal end, the elongate tubular member having a first opening from the lumen at the distal end, and first and second outlet pathways from the lumen;

the first and second outlet pathways having first and second exits,
respectively, defining points at which the first and second outlet pathways open to an
environment surrounding the sheath; ~~a second opening from the lumen proximal to the~~
~~distal end, and a third opening from the lumen proximal to the distal end;~~

wherein the first exit is proximal the first opening and the second exit is

proximal the first exit and distal of the proximal end of the sheath; and

wherein the first opening and the first outlet pathway and second openings
are adapted to pass a first elongate member, and the elongate tubular member further
adapted to pass a second elongate member through the second outlet pathway, through
the lumen from proximal the first exit and through the first opening ~~the first and third~~
~~openings adapted to pass a second elongate member, the first opening having a diameter~~
~~at least as great as the first outer diameter of the medical device.~~

26. (Original) The sheath of claim 25, wherein the sheath is a rapid exchange sheath.

27. (Currently Amended) The sheath of claim 25, wherein the second ~~exit opening~~ is a short distance proximal from the distal end.

28. (Previously Presented) The sheath of claim 25, wherein the third opening is a short distance proximal from the distal end.

29.-36. (Cancelled)

37. (Currently Amended) A method for deploying an endoluminal medical device having a first outer diameter in a first, closed state and a second outer diameter in a second, expanded state, comprising the steps of:

providing ~~[[a]]~~ a sheath having an first elongate tubular member having a lumen, a proximal end and a distal end, the elongate tubular member having a first

opening from the lumen at the distal end, and first and second outlet pathways from the lumen;

the first and second outlet pathways having first and second exits defining points at which the first and second outlet pathways, respectively, open to an environment surrounding the sheath; a second opening from the lumen proximal to the distal end, and a third opening from the lumen proximal to the distal end, the first opening having a diameter at least as great as the first outer diameter of the medical device; wherein the first exit is proximal the first opening and the second exit is proximal the first exit and distal of the proximal end of the sheath;

advancing a guidewire to a region of interest within a patient's vessel;

passing a proximal end of the guidewire through the first opening of the elongate tubular member, and through the first outlet pathway ~~second opening~~; and

advancing the elongate tubular member over the guidewire until it is positioned within the region of interest, the elongate tubular member having an endoluminal medical device extending through the lumen from proximal the first exit toward the first opening ~~carried at the distal end of the elongate member.~~

38. (Currently Amended) The method of claim 37, wherein the first exit ~~second opening~~ is a short distance proximal to the distal end.

39. (Currently Amended) The method of claim 37, wherein the second exit ~~third opening~~ is a short distance proximal to the distal end.

40. (Currently Amended) The method of claim 37, wherein the

endoluminal medical device is releasably carried at the distal end of the elongate tubular member.

41. (Currently Amended) The method of claim 37, wherein the endoluminal device is associated with the distal end of a second elongate member that extends proximal through the second exit ~~third opening~~, and is operable from a proximal end outside the patient's body.

42. (Original) The method of claim 41, wherein the endoluminal device is mounted at the distal end of a second elongate member.

43. (Original) The sheath of claim 41, wherein the endoluminal medical device is selected from the group consisting of an angioplasty catheter, a stent-deployment catheter, an atherectomy catheter, an intravascular ultrasound catheter, a filter catheter, a guidewire, and an aspiration catheter.

44. (Currently Amended) The method of claim 37, wherein the ~~first elongate member~~ is an elongate tubular member ~~having~~ has a lumen extending between the proximal and distal ends.

45. (Currently Amended) The method of claim ~~[[44]]~~ 37, wherein the endoluminal medical device is positioned within the lumen of the elongate tubular member before the step of advancing the elongate tubular member over the guidewire.

46. (Original) The method of claim 37, wherein the step of advancing the guidewire to a region of interest is completed before the step of passing a proximal end of the guidewire through the first opening.

47. (Original) The method of claim 37, further comprising the step of removing the guidewire.

48. (Currently Amended) The method of claim 37, further comprising the step of withdrawing the elongate tubular member.

49. (Original) The method of claim 48, further comprising the step of deploying the endoluminal medical device.

50. (Original) The method of claim 37, wherein the endoluminal medical device is a support wire having a filter associated with a distal end.

51. (Currently Amended) The method of claim 37, further comprising the step of advancing a second endoluminal medical device over ~~[[the]]~~ a second elongate member.

52. (Original) The method of claim 50, further comprising the step of expanding the filter downstream of the region of interest.

53. (Original) The method of claim 37, wherein the vessel is an

artery.

54. (Original) The method of claim 53, wherein the artery is selected from the group consisting of an internal carotid artery, a saphenous vein graft, a renal artery, a native coronary artery, a peripheral artery, a femoral artery, and an iliac artery.

55. (Original) The method of claim 53, wherein the artery is the common carotid artery.

56. (Original) The method of claim 53, wherein the artery is the aorta.

57. (Original) The method of claim 37, wherein the elongate tubular member is positioned upstream of a lesion.

58. (New) The sheath of claim 1, wherein the first opening has a diameter at least as great as the first outer diameter of the medical device.

59. (New) The method of claim 10, wherein the first opening has a diameter at least as great as the first outer diameter of the medical device.

60. (New) The sheath of claim 25, wherein the first outlet pathway extends from a second opening in the lumen to the first exit.

61. (New) The sheath of claim 25, wherein the second outlet pathway extends from a third opening in the lumen to the second exit.

62. (New) The sheath of claim 25, wherein the first and second outlet pathways are defined by openings through the side of the elongate tubular member.

63. (New) The method of claim 37, wherein the first outlet pathway extends from a second opening in the lumen to the first exit.

64. (New) The method of claim 37, wherein the second outlet pathway extends from a third opening in the lumen to the second exit.

65. (New) The method of claim 37, wherein the first and second outlet pathways are defined by openings through the side of the elongate tubular member.